

CLAIMS

What is claimed as new and desired to be protected by Letters Patent of the United States is:

- 1 1. A method for planarizing a surface which is formed on a substrate which comprises
2 providing on the surface to be planarized a liquid slurry composition comprising
3 abrasive particles and solid lubricant particles;
4 and contacting said surface with a polishing pad.

- 1 2. The method of claim 1 wherein the amount of the solid lubricant particles is about 0.3
2 to about 10 % by weight.

- 1 3. The method of claim 1 wherein the lubricant particles are selected from the group
2 consisting of molybdenum disulfide, molybdenum diselenide, tungsten disulfide, tungsten
3 diselenide, niobium disulfide, niobium diselenide, graphite, poly (tetrafluoroethylene),
4 fluoroethylene-propylene copolymers, perfluoroalkoxy resins, polyvinylidene fluoride and
5 mixtures thereof.

- 1 4. The method of claim 1 wherein the lubricant particles have a coefficient of friction of
2 0.03 to about 0.3.

- 1 5. The method of claim 1 wherein the lubricant particles have a particle size of 0.05 to
2 about 18 microns.

- 1 6. The method of claim 1 wherein the abrasive particles comprise a member selected
2 from the group consisting of ceria, alumina, silica, titania, zirconia, polymer particles,
3 organic/inorganic composite particles, and combinations.

- 1 7. The method of claim 1 wherein the amount of the abrasive particles is about 0.1 to
2 about 20 percent by weight.

- 1 8. The method of claim 1 being an aqueous slurry.
- 1 9. The method of claim 1 wherein the composition further comprising a surfactant.
- 1 10. A slurry composition comprising abrasive particles and solid lubricant particles.
- 1 11. The composition of claim 10 wherein the amount of the solid lubricant particles is
2 about 0.03 to about 10 % by weight.
- 1 12. The method of claim 10 wherein the lubricant particles are selected from the group
2 consisting of molybdenum disulfide, molybdenum diselenide, tungsten disulfide, tungsten
3 diselenide, niobium disulfide, niobium diselenide, graphite, poly (tetrafluoroethylene),
4 fluoroethylene-propylene copolymers, perfluoroalkoxy resins, polyvinylidene fluoride and
5 mixtures thereof.
- 1 13. The composition of claim 10 wherein the lubricant particles have a coefficient of
2 friction of 0.03 to about 0.3.
- 1 14. The composition of claim 10 wherein the lubricant particles have a particle size of
2 0.05 to about 18 microns.
- 1 15. The composition of claim 1 wherein the abrasive particles comprise a member
2 selected from the group consisting of ceria, alumina, silica, titania, zirconia, polymer
3 particles, organic/inorganic composite particles and combinations thereof.
- 1 16. The composition of claim 10 wherein the amount of the abrasive particles is about 0.1
2 to about 20 percent by weight.
- 1 17. The composition of claim 10 being an aqueous slurry.

1 18. The composition of claim 1 which further comprises a surfactant.

1 19. The composition of claim 1 which further comprises at least member selected from
2 the group consisting of oxidants, preservatives and anticorrosion agents.

1 20. A method for planarizing a surface which is formed on a substrate which comprises
2 providing on the surface to planarized a liquid composition comprising abrasive particles and
3 solid lubricant particles; and
4 contacting said surface with a polishing pad.

1 21. The method of claim 20 wherein the surface to be polished is a thin film.